

ABSTRACT

A hybrid vehicle is equipped with an internal combustion engine, a motor/generator, and a Rankine cycle system for recovering thermal energy of exhaust gas. The output of the Rankine cycle system is input into a transmission or, alternatively, converted into electric power and used for charging a battery. The Rankine cycle system has temperature setter that sets the temperature of steam at the outlet of an evaporator. A pressure setter is provided for setting steam pressure at the inlet of an expander. A pressure controller is provided for controlling the steam pressure at the inlet of the expander. The evaporator generates steam to be supplied at a pressure that is optimum for the expansion ratio of the expander. The Rankine cycle system is operated when the vehicle is accelerating or cruising and efficiently recovers thermal energy of the exhaust gas and reduces the fuel consumption of the internal combustion engine.